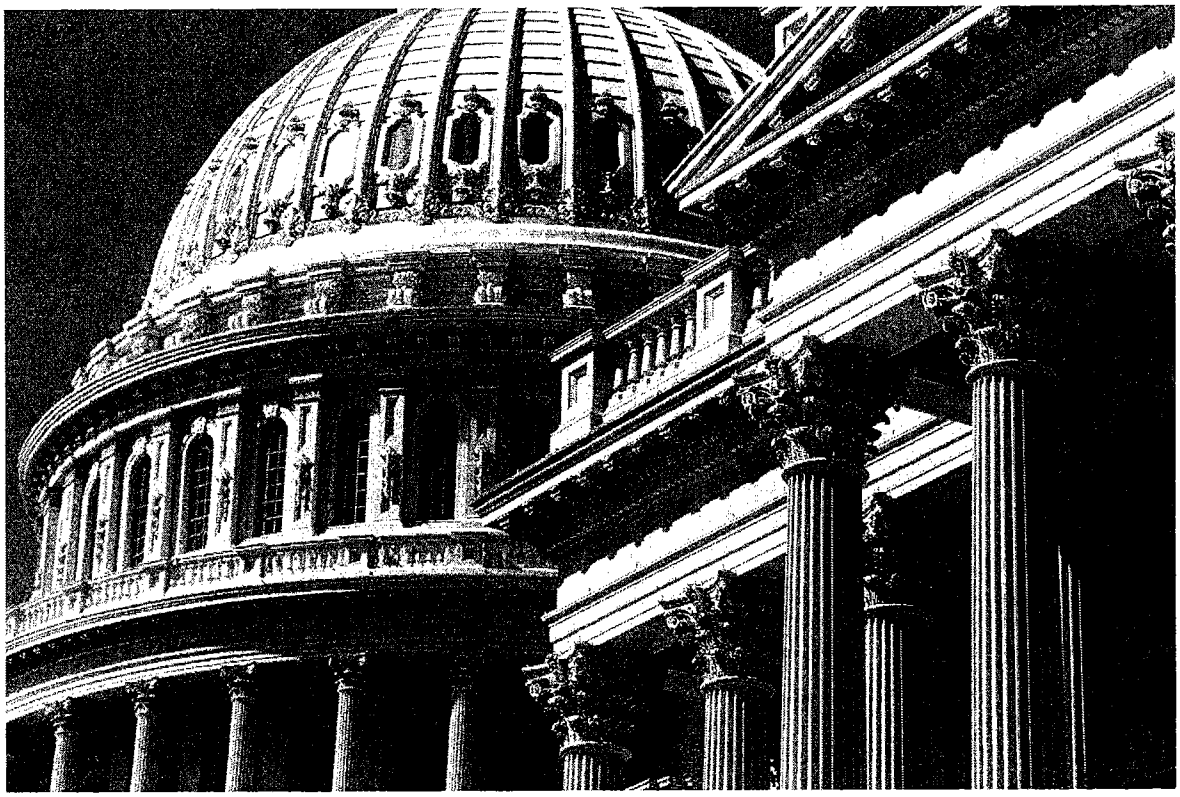
ATA TESTIMONY

# *Climate Change and Energy Independence: Transportation and Infrastructure Issues*



Statement of James C. May
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before the
House Committee on Transportation and Infrastructure

May 16, 2007

AIR TRANSPORT ASSOCIATION

Thank you, Mr. Chairman. ATA airline members transport more than 90 percent of all U.S. airline passenger and cargo traffic. Our airlines take climate change and energy independence very seriously and I appreciate the opportunity to appear before you today to discuss these issues.

INTRODUCTION AND OVERVIEW

In the broadest policy terms, the task before Congress is how to achieve reductions in greenhouse gas (GHG) emissions while maintaining economic growth and enhancing energy security. The importance of environmental responsibility cannot be overstated and the risks and opportunities associated with transforming the American economy, which has been fossil-fuel dependent from day one, are inherent and significant. It will not be easy. It will take time and we have to get it right. I want to emphasize three points essential to moving this effort forward:

First, ***commercial airlines are extremely carbon efficient.*** They will become even more efficient moving forward and will be ***key in any successful strategy*** for simultaneously addressing climate change and energy security while preserving economic growth. For the past several decades, commercial airlines have dramatically improved our carbon efficiency by investing billions in fuel-saving aircraft and engines, and innovative technologies like winglets and cutting-edge route-optimization software. Fuel is our largest cost center, creating an economic imperative to maintain our record of continuously improving carbon efficiency. A vibrant, growing aviation sector is a key part of the solution – not an impediment to ensuing a future where a strong economy, freedom from foreign oil and cleaner air are the order of the day.

Second, ***we ask Congress to contribute to the solution.*** Technology development and implementation will be the key to success. In the aviation sector, Congress can ensure significant GHG reductions in the near term by updating the antiquated air traffic control (ATC) system and, specifically, supporting funding of the Next Generation Air Transportation System (NextGen). Implementation of this satellite-based navigation technology will improve fuel efficiency and reduce GHG emissions by 10 to 15 percent. Congress also has an indispensable role to play in facilitating carbon-efficiency gains in the longer term. Advancements in aviation technology that will further improve carbon efficiency will come only with reinvigorated investments in basic aeronautics research and development programs at NASA and Federal Aviation Administration (FAA). The nation as a whole benefits from this research and thus general funds should be used. Congress should provide the funding necessary to support this research. In addition, we ask Congress to take steps to further provide incentives for the development and commercial deployment of alternative fuels.

Third, the United States should ***continue to support the ongoing efforts of the International Civil Aviation Organization's (ICAO)*** to further address aviation's contribution to climate change in a global context. ICAO already has made considerable progress toward achieving a solution appropriate to addressing the uniquely global climate-change issue in the context of a uniquely global business. We urge Congress to allow the ongoing ICAO process to play out.

## COMMERCIAL AVIATION IS EXTREMELY CARBON EFFICIENT AND WILL BE KEY IN ANY SUCCESSFUL STRATEGY

Recently, there have been media reports, many coming out of Europe, raising alarm bells about commercial aviation's contribution to climate change. Let me set the record straight. U.S. commercial aviation contributes about 2 percent of domestic U.S. greenhouse gas emissions.[1] To put that into context, domestically, power plants produce about one-third of GHGs[2] worldwide, cattle and other livestock account for 18 percent of GHG emissions.[3]

At the same time, commercial aviation is critically important to local, national and global economies, underpinning a large percentage of economic output. A March 2006 study by the Campbell-Hill Aviation Group found that "the national economy is highly dependent on commercial aviation, which is directly or indirectly responsible for 5.8 percent of gross output, 5.0 percent of personal earnings and 8.8 percent of national employment."[4] The study further noted that this translated into $380 billion in earnings, 11.4 million jobs and $1.2 trillion in U.S. output in 2004. Placing our economic output side by side with our GHG output, it is clear that we are extremely carbon efficient.

We have been able to deliver continually more value to the economy even as we have dramatically reduced our carbon footprint because we are constantly improving our fuel efficiency. Commercial aviation has achieved a 35 percent improvement in fuel efficiency since 2001 alone. In fact, absolute fuel consumption of U.S. carriers in 2006 remained 5 percent below the peak reached in 2000, though carriers transported 12 percent more passengers and 22 percent more cargo.[5] Similarly, EPA recently observed that "[w]hile $CO_2$ emissions from commercial aircraft grew approximately 14.8 percent . . from 1990 to 2005, passenger miles traveled increased by 69 percent over the same period."[6] In other words, our productivity grew 4.7 times faster than our $CO_2$ emissions from 1990 to 2005. In contrast, freight trucks showed the reverse trend – with GHG emissions growing faster than vehicle miles traveled.[7] Passenger vehicles also have lagged far behind aircraft in efficiency – as EPA noted:

> Since 1990, there has been a significant increase in vehicle miles traveled (VMT) by light-duty trucks, freight trucks and aircraft. At the same time, the fuel economy of light-duty trucks and freight trucks has remained roughly constant. By contrast, commercial aircraft have become noticeably more fuel efficient and have operated with an increasing percentage of seats occupied.[8]

Within the aviation sector, it is important to remember that different types of commercial aircraft have vastly different impacts on the environment. Commercial jets are five to six times more fuel efficient than corporate jets. The math is simple: carrying 250 people and cargo across the country in a single plane burns a lot less fuel than over 30 separate corporate jets, each flying six people. U.S. airlines are highly motivated to continue this trend. Fuel, long one of the two highest costs for airlines, today is our largest cost center, averaging 20 percent to 30 percent of total operating expenses and costing over $38 billion in 2006. In light of this, even in the highly constrained financial environment we have encountered in recent years, our airlines have invested heavily in capital and technology to realize our remarkable fuel-efficiency gains.

We have left no stone unturned. Some examples of our efforts to reduce fuel burn to date include:

- **Upgrading Fleets** – Airlines have expended billions to upgrade their fleets through investments in new airframes and engines, removing less fuel-efficient aircraft from their fleets and improving overall fleet efficiency
- **Introduction of Innovative, Cutting-Edge Technologies** – Airlines also have invested in technologies to make existing airframes more efficient, for example installing winglets, which reduce aircraft drag and thereby reduce fuel consumption. Airlines also have developed software to analyze flight paths and weather conditions, allowing aircraft to fly more direct, efficient routes (subject to air traffic control approval)
- **Improved In-Flight Operations** – Airlines utilize systems to optimize speed, flight path and altitude, which not only reduces fuel consumption in the air, but avoids wasting fuel while waiting for a gate on the ground. Airlines also have analyzed redistribution of weight in the belly of aircraft and introduced life vests on certain domestic routes, allowing them to overfly water on a more direct route
- **Improved Ground Operations** – Airlines have introduced single-engine taxiing when conditions permit, plugged into electric gate power where available to avoid running their auxiliary power units, used tugs to position aircraft where feasible, and have redesigned hubs and schedules to alleviate congestion. They also have converted to electric ground support equipment when feasible
- **Reducing Onboard Weight** – In recent years, as fuel prices skyrocketed, airlines exhaustively reviewed ways to reduce aircraft weight – removing seat-back phones; excess galley equipment and magazines; introducing lighter seats and beverage carts; stripping primer and paint; and a myriad of other detailed measures to reduce weight and improve fuel efficiency

Looking ahead, airlines will continue to do whatever it takes to drive down fuel costs by driving up fuel efficiency and, thus reducing GHG emissions. For example:

In the next three years over 500 new aircraft will be delivered at an estimated cost in the range of $40 billion; that's on top of the already significant fleet turnover.

Just last week, FAA Administrator Blakey highlighted the tremendous success of required navigation performance (RNP) systems that allow us to fly very precise approach paths, achieving significant fuel savings. Our airlines announced plans to invest hundreds of millions of dollars to retrofit aircraft with equipment necessary to take advantage of RNP.

ATA also has expressly endorsed legislation supporting the development of alternative fuels and we are participating in various initiatives in this regard. Mr. Altman of the Civil Aeronautics Alternative Fuel Initiative (CAAFI) is speaking today about the effort to develop alternative aviation fuels. ATA supports that effort and all efforts to develop safe alternatives that increase incremental fuel supplies – especially if both environmentally friendly and economically viable.

Since commercial airlines already have achieved such tremendous fuel efficiency improvements, it is important to remember that additional near-term improvements necessarily will be evolutionary, rather than revolutionary. We have made our achievements in fuel efficiency primarily by demanding new airframe, engine and other technologies from manufacturers and investing billions of dollars to acquire them. As a result, this equipment and technology already has been driven extremely close to currently achievable fuel-efficiency limits, and revolutionary advances are not expected in the near term. In addition, aircraft are extremely expensive capital commodities, with a useful economic life of 30 years or more. Consequently, unlike some other sectors – which either have not pursued efficiency improvements as aggressively or are not as reliant on such high-cost, low-turnover equipment – commercial aviation will, of necessity, rely on evolutionary advances to achieve fuel efficiency improvements in the near term.

In sum, ***unrelenting carbon-efficient improvement is business as usual for commercial airlines***. Because GHG emissions are directly related to fuel burn, GHG emissions are not an "economic externality" for us and we have been, are and will continue to be driven by an economic imperative to reduce fuel consumption and thus GHG (and other) emissions. Looking back, our improvement in fuel efficiency has been remarkable. If other sectors had done half of what airlines have done – even since 1990 – to improve fuel efficiency, we'd be facing a much less formidable task. Looking ahead, the aviation sector is just the type of carbon-efficient economic engine Congress should be looking to drive its effort to create a future in which our economy is vibrant, we are free from dependence on foreign oil and our air is ever cleaner. In short, ***a growing aviation sector is a key to making this future a reality***.

## CONGRESS CAN *AND MUST* CONTRIBUTE TO THE SOLUTION

While we are committed to driving our carbon efficiency even further, we welcome the opportunity to work with Congress and seek congressional leadership and action in three key areas.

First, and foremost, Congress should ensure that our outdated, inefficient air traffic control system is modernized. This is entirely in the hands of Congress and the FAA. Studies consistently have shown that modernization of the ATC system will improve fuel efficiency and reduce GHG emissions by 10 to 15 percent. Put another way, inefficiencies in the current ATC system are responsible for at least 10 to 15 percent of the GHGs from commercial aviation. To date, the airlines have worked closely with the FAA to improve efficiency within the existing ATC system. For example, adopt reduced vertical separation minimums and continuous descent approaches (CDA), and implementing ADSB capabilities. We are also working with the FAA and other agencies on a fundamental redesign of the ATC system through the Next Generation Air Transportation System (NextGen) project, Operational Evolution Partnership, and other initiatives. The FAA reauthorization legislation now before Congress will support NextGen by providing for the satellite-based navigation technologies that are indispensable in eliminating inefficient routings, congestion and delays. ATA is supporting the modernization initiative through our "Smart Skies" initiative.[9] We urge your support.

Second, we urge Congress to reinvigorate NASA and FAA environmental aeronautics research and development (R&D) programs. As noted, previously pointed out above, commercial aviation will continue to improve the GHG intensity of its operations in the near term through evolutionary advances in airframe and engine technology and through implementation of operational measures to reduce fuel burn. Given the significant achievements to date, further revolutionary advancements in technology can only come through renewed investments in environmental aeronautics research and development programs at NASA and FAA, which only government can provide. The pending FAA reauthorization legislation contains such a program, the Consortium for Lower Energy, Emissions and Noise Technology Partnership (CLEEN), which would take much-needed, initial steps to support research that will accelerate the introduction of more fuel-efficient, low-emissions technology into the fleet. [See H.R. 1356, 110th Cong. § 606 (2007).] Such government-led R&D also serves to preserve American leadership in aeronautics and, thus, an extremely important component of our economy.

Third, we encourage congressional action to spur further commercial development of alternative fuels. ATA and its members are actively engaged in efforts to develop alternatives to traditional petroleum-based jet fuel. Alternative fuels have the potential to bring significant economic, operational and environmental benefits to the airlines, as well as energy security for the country. The primary factor here, of course, is ensuring flight safety. Another critical factor is establishing the infrastructure for deployment of alternative fuels on a widespread, commercial basis. While there are many such issues that need to be addressed, ATA is encouraged by efforts by the Department of Defense, NASA, the FAA, airframe and engine manufacturers, and academic institutions to ensure that a range of coal-to-liquid (CTL) technologies, biofuels and other alternative fuels are fully explored and considered by the marketplace. Any incremental fuel supply, especially if both environmentally friendly and economically viable, is something worth pursuing. We urge Congress to move forward with appropriate legislation.

We are confident that we will continue to improve our carbon efficiency into the future. In this context, careful consideration must be given to the question of whether the economic underpinnings of putative regulatory schemes, such as cap-and-trade or carbon charges, make sense when applied to commercial aviation. Specifically, any regulatory scheme that is intended to send a "carbon price signal" to drive investment needs to be considered very carefully to ensure that it has the intended effect of providing incentive for industry to reduce GHG emissions. Most importantly, policies should generate meaningful results and not unfairly burden early actors like the commercial aviation sector with additional costs, or compromise their ability to continue heavily investing in capital and technology.

## GLOBAL INDUSTRY - GLOBAL CONSIDERATIONS: CONTINUE TO SUPPORT INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) EFFORTS

The International Civil Aviation Organization (ICAO) is in the midst of ongoing efforts to further address aviation's contribution to climate change. Several factors militate in favor of letting this ICAO process play out.

- The causes and effects of climate change are borderless, raising the potential that unilateral action by the United States will not protect the U.S. public because other countries like China and India may not act
- Aviation is a global business and U.S. carriers are subject to intense foreign competition. Raising the cost of operating in the U.S. market necessarily would disproportionately impact U.S. carriers, potentially threatening the global competitiveness of U.S. airlines
- ICAO, the United Nations body charged with establishing standards and recommended practices for international aviation, has a proven record of effectively dealing with environmental issues and already is far down the road toward reaching a consensus on aviation-related GHG emissions

We ask Congress to look to opportunities to address this global industry on a global basis. As discussed below, ICAO is uniquely positioned to achieve a global solution for the aviation sector and already has made considerable progress toward achieving such a solution. Thus, we urge Congress to allow the ICAO process to play out.

Recognizing that coordination between countries is needed to facilitate international aviation, ICAO has been charged with establishing standards and recommended practices for international aviation pursuant to the Convention on International Civil Aviation, commonly referred to as the "Chicago Convention" (to which 189 countries, including the United States, are parties). The world's airlines and related government bodies have been fully engaged on the climate-change issue for many years. Since 1998, ICAO, which is charged with setting emissions standards for aircraft,[10] has been studying how to further reduce GHGs from aviation, consistent with the imperative that safety must remain the prevailing consideration.

Based on its extensive studies, ICAO specifically has endorsed the use of voluntary measures and has adopted formal guidance on voluntary agreements as well as guidance entitled "Operational Opportunities to Minimize Fuel Use and Emissions," which ATA and its member carriers helped develop. In light of this work, countries such as Japan and Canada, both of whom are parties not only to the United Nations Framework Convention on Climate Change (UNFCCC) but also to the Kyoto Protocol, and whose economies are closely aligned to the United States, have chosen to address the GHGs from their aviation sectors through voluntary agreements targeting specific fuel-efficiency goals.[11] ICAO also has undertaken study of GHG taxes and charges and emissions trading, and concluded that GHG taxes and charges are ***not*** cost effective. Specifically, assuming a hypothetical target of a 25 percent decrease in projected growth of emissions, ICAO found that GHG taxes/charges would cost $47 billion annually on a worldwide-basis.[12] Considering that the U.S. share of global aviation is approximately 34 percent,[13] this would translate to a cost to U.S. carriers of approximately $16 billion annually. ICAO found that targeting absolute emissions would be even more costly. For example, a hypothetical target of a 5 percent absolute reduction from 1990 levels was estimated to cost approximately $245 billion annually if implemented on a worldwide basis.[14] In light of these considerations, in 2004, ICAO member states agreed to a moratorium on implementation of GHG charges on international aviation through the ICAO Assembly meeting in September 2007, when this issue will again be discussed.

Despite the general consensus among ICAO Member States that a well-designed emissions trading system would be more cost effective than taxes or charges on aviation activity, ICAO has also found that emissions trading, nonetheless, would be very expensive for aviation. This is because aviation is fossil-fuel dependent, as alternative fuels that are now available for some industry sectors simply are not viable for commercial jet aircraft, and airlines already are driven to be as fuel efficient as possible. ICAO analysis of the costs puts this in context. Assuming a hypothetical target of a 25 percent decrease in projected growth of emissions, ICAO found that open emissions trading would cost the airlines $17 billion annually on a worldwide basis if "baseline" allowances were auctioned, or $1.63 billion annually if all "baseline" allowances were grandfathered (i.e., distributed free of charge);[15] the U.S. share of these costs would be approximately $5.8 billion and $550 million, respectively, annually. Further, a hypothetical target of a 5 percent absolute reduction from 1990 levels was estimated to cost over $60 billion annually on a worldwide basis if "baseline" allowances were auctioned, or $17.3 billion annually if all "baseline" allowances were grandfathered;[16] the U.S. share of these costs would be approximately $20.4 billion and $5.9 billion, respectively, again on an annual basis.

In light of the fact that aviation already has incentive to minimize fuel burn and resulting GHGs, and in light of the significant costs of open emissions trading, ICAO has declined to adopt an emissions trading system for international aviation or to recommend that its members do so. Accordingly, we urge Congress to decline to adopt such a system for U.S. commercial aviation and to defer to ICAO for further work on this issue. However, should Congress consider covering U.S. aviation in a U.S. trading regime, it should take into account ICAO guidance on emissions trading.[17]

## CONCLUSION

I close by asking you to note the achievements that commercial airlines have made in reducing fuel burn and emissions, particularly when compared to other industries, and the actions that we are taking to continue our progress in this regard. While we are fully committed to working with Congress and are asking for congressional leadership in each of the areas I have described, we are not asking you to work **for** us, we're asking you to work **with** us in addressing this environmental and energy concern.

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[1] According to the most recent United States Environmental Protection Agency (EPA) analysis of GHG emissions in the transportation sector, commercial aviation's contribution to total U.S. GHG emissions in 2003 was 1.75%. EPA, *Greenhouse Gas Emissions from the U.S. Transportation Sector – 1990 -2003* (March 2006) at pages 5 and 21 ("[t]ransportation sources were responsible for about 27 percent of total U.S GHG emissions in 2003," "[a]ircraft produced about 9 percent of U.S. transportation greenhouse gas emissions in 2003," and "[c]ommercial aircraft produced 72 percent of U.S. aircraft GHGs in 2003"). The more recent inventory of GHG emissions estimates total GHG emissions from "commercial aircraft" to be 158.1 teragrams of carbon dioxide equivalent (Tg $CO_2$ Eq.), or about 2.2 percent of the nation's 7,260.4 Tg $CO_2$ Eq. EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2005*, Table A-108 at p. A-128 and Table ES-2 at p. ES-6 (April 15, 2007). It is not clear, what is included in the "commercial aviation" category, but is clear the category has been expanded to include operations other than those conducted by carriers like ATA members. See note *c* to Table 3-7 at p. 3-9.

[2] EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2004* at ES-13.

[3] United Nations, Livestock Environment and Development Initiative, *Livestock's Long Shadow – Environmental Issues and Options* (2006) at 271.

[4] The Campbell-Hill Aviation Group, "Commercial Aviation and the American Economy," March 2006. It is estimated that on a world-wide basis, commercial aviation accounts for approximately 3% of total GHGs, while at the same time contributing over 8% of the world's economic activity. See, International Air Transport Association, "Debunking Some Persistent Myths about Air Transport and the Environment."

[5] ATA analysis based on 2006 Revenue Passenger Mile (RPM) data submitted by carriers on DOT Form 41. *See* http://www.airlines.org/economics/energy

[6] EPA, *GHG Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990 – 2005* at 3-8.

[7] **Id.**

[8] **Id.** at 3-7.

[9] Smart Skies is a national campaign led by the ATA airlines, which advocates modernization of the U.S. air traffic control system (ATC) and its funding mechanisms. For more on this initiative, see the Smart Skies web site, at http://www.smartskies.org

[10] ICAO has established such standards for oxides of nitrogen ($NO_x$), carbon monoxide (CO), hydrocarbons (HC) and smoke. These standards, which have been made more stringent as technology has allowed, have been incorporated into U.S. law.

[11] See, e.g., Memorandum of Understanding Between Transport Canada and the Air Transport Association of Canada (Nov. 15, 2004). The official announcement of this agreement by the Canadian government can be found at: http://www.tc.gc.ca/mediaroom/releases/nat/2004/04-h105e.htm

[12] These figures are derived from "Analysis of Market-Based Options for the Reduction of $CO_2$ Emissions for, Aviation with the Aero Modeling System," page A-3, Table A2 (November 2000) (prepared by ICAO's Committee on Aviation Environmental Protection MBO Analysis Task Group, hereinafter "MATG Report").

[13] ATA analysis based on 2006 Revenue Ton Miles (RTM) data submitted by carriers on DOT Form 41 and worldwide traffic reported by ICAO.

[14] Id.

[15] These figures are derived from ICAO's MATG Report, at A-28 and A-30, Tables A21 and A23.

[16] Id.

[17] ICAO also has studied voluntary emissions trading as well as how international aviation emissions might be included in a country-specific or region-specific emissions trading scheme. As a result, in February of this year, ICAO's Committee on Aviation Environmental Protection (CAEP) adopted a "Report on Voluntary Emissions Trading for Aviation" and "Guidance on the Use of Emissions Trading for Aviation." These documents, which will be considered by the ICAO Council and ICAO Assembly in their upcoming meetings identify many of the considerations that should be taken into account if a country is considering emissions trading for aviation. While believing that inclusion of aviation in an emissions trading system is unnecessary and counterproductive, for the reasons cited above, should the U.S. pursue such a course, the ICAO guidance should be taken into account.